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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,060	09/22/2003	Richard C. Schaftlein	2002P15893US01	7828

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Intellectual Property Department
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EXAMINER	
HOANG, PHUONG N	
ART UNIT	PAPER NUMBER
2194	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/667,060	SCHAFTLEIN ET AL.	
	Examiner	Art Unit	
	PHUONG N. HOANG	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 32 are pending for examination. This office action is in response to amendment filed 2/21/08.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 – 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. As to claims 1, 14, 22, and 32, "said soft programmable logic controller (PLC) comprised by a single computer" is indefinite. How can a software comprises hardware? The software can only be executed or run on a computer, not comprised by a computer.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 6 – 14, 17 – 26, 29, 31 - 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Kimura, US patent no. 6,996,828 in view of Halang, "Real-time Systems" pages 291 – 313, and further in view of Notenboom, US patent no. 5,748,468.

7. Halang reference is cited by applicant in IDS filed 8/7/06. Kimura and Notenboom were cited in previous office action.

8. **As to claim 1**, Kimura teaches a method comprising of:

reassigning resources (reassigned resources, col. 1 - 3) in a programmable controller (program control, col. 1 lines 30 - 60), said PCL comprising by a single computer (single computer, abstract, and figure 2 and associated text), said reassigning comprising the steps of:

selecting an interface in a first operating environment (first OS, col. 9 lines 35 – 55, col. 10 lines 55 - figures 9, 10, and 12 and associated text);

selecting a virtual slot in a second operating environment (entry point for second OS) for installation of the interface;

creating an installation file in the first operating environment (object file name, fig. 10 and associated text) for installation of the interface in the second operating environment; and

installing the interface in the second operating environment using the installation file to reassign a resource between the first operating environment and the second operating environment (load device driver of the second OS, col. 15 lines 15 - 25), and interrupt line of the reassigned resource (interrupt, figure 14 and associated text).

9. Kimura does not explicitly teach the computer comprises control program is a soft programmable logic controller (PLC), and

Halang teaches the single computer comprises a soft programmable logic controller (PLC, ch. 15 p. 291 – 313).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Kimura and Halang's system because Halang's PLC would function as program control to control and configure resource allocation between each operating system in the computer system (col. 1 lines 40 – 55).

10. Kimura and Halang do not teach at least one real-time card.

Notenboom teaches a real-time card (card 50, figures 2 and 3 and associated text).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Kimura, Halang, to include Notenboom's real-time card because the card would provide connectors for coupling the devices to the network for installation process. In addition, Notenboom also teaches resource allocation (col. 7 lines 55 – 65).

11. **As to claim 6**, Kimura teaches wherein the installing step overrides an installation of a device driver associated with the first operating environment (update, col. 11 lines 47 - 56).

12. **As to claim 7**, Kimura teaches during the creating step, installation parameters (parameter table 800) are obtained from the first operating environment and used in the creation of the installation file (object file name, figure 10 and associated text).

13. **As to claim 8 - 9**, Kimura teaches deleting the installation file (unload device driver, col. 10 lines 37 - 40).

14. **As to claim 10**, Kimura teaches interrupt (interrupt, figure 9A – 11 and associated text) sharing for the reassigned resource so that an interrupt may be used for more than one resource.

15. **As to claim 11**, Kimura teaches the steps of displaying (display 114) the resource for reassignment; and selecting an empty interface slot in the second operating environment to receive the resource being one of an interface, a card, a device and a port.

16. **As to claim 12**, Kimura modifying (update, col. 11 lines 47 – 56) to installation parameters to specify an installation file for a real-time driver.

17. **As to claim 13**, Kimura teaches updating registry (figures 10, 17, and 19 and associated text).

18. **As to claim 14**, this is the method claim of claim 1. See rejection for claim 1 above. Further, Halang teaches the device driver can be installed automatically (PLC operates autonomously without human intervention, page 297).

19. **As to claim 17**, Halang teaches wherein in the assigning step includes associating the assigned resource with a software component instance (instance, page 303).

20. **As to claims 18**, Kimura teaches modifying (modifying for each particular device, col. 6 lines 10 – 20) to installation parameters to specify an installation file for a real-time driver.

21. **As to claim 19**, see rejection for claim 11 above.

22. **As to claim 20**, Halang teaches building a list of available drivers for the selected resource (p. 310).

23. **As to claim 21**, Halang teaches the resource being one of a card, a port, an interface, and a device (device, page 310).

24. **As to claim 22**, this is the system claim of claim 1. See rejection for claim 1 above.

25. **As to claim 23**, Halang teaches reassigning the resources to a real-time operating environment (title and page 297).

26. **As to claim 24**, see rejection for claim 18 above.

27. **As to claims 25 - 26**, Kimura teaches wherein the installing step overrides an installation of a device driver associated with the first operating environment (update, col. 1 lines 50 - 55).

28. **As to claim 29**, Kimura teaches interrupt (interrupt, col. 5 lines 40 – 45) for the reassigned resource so that an interrupt may be used for more than one resource.

29. **As to claim 31**, see rejection for claim 21 above.

30. **As to claim 32**, this is the product claim of claim 1. See rejection for claim 1 above.

31. Claims 2 – 5, 15, 27 - 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura, US patent no. 6,996,828 in view of Halang, "Real-time Systems" pages 291 – 313, and further in view of Notenboom, US patent no. 5,748,468, and further in view of Philyaw, US patent. no. 6,725,260.

32. Philyaw was cited in previous office action.

33. **As to claims 2 - 5**, Kimura, Halang, and Notenboom do not explicitly teach wherein the first operating environment is non real-time operating environment and the second operating environment is real-time operating environment.

Philyaw teaches wherein the first operating environment is non real-time operating environment and the second operating environment is real-time operating environment (col. 13 lines 25 – 50, col. 15 lines 10 - 25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kimura, Halang, Notenboom and Philyaw's system because Philyaw's real-time mode would let the system immediately upgrade the driver for hardware components when resources changed, and Philyaw's system also teaches configuring and installing network component (title).

34. **As to claim 15**, Philyaw teaches wherein the first operating environment is non real-time operating environment and the second operating environment is real-time operating environment (col. 13 lines 25 – 50, col. 15 lines 10 - 25).

35. **As to claim 27 - 28**, Philyaw teaches deleting the installation file (uninstall, col. 32 lines 8 – 10).

36. Claims 16 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura, US patent no. 6,996,828 in view of Halang, "Real-time Systems" pages 291 – 313, and further in view of Notenboom, US patent no. 5,748,468, and further in view of Wilson, US pub. no. 2003/0041088.

37. Wilson was cited in previous office action.

38. **As to claims 16 and 30**, Wilson teaches updating registry (0018, figure 6 and associated text).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kimura, Halang, and Wilson's system because the registry would store archival device information and identify newly installed devices (0018).

Response to Arguments

39. Applicant's arguments filed 2/21/08 have been considered but are not persuasive.

40. Applicant argued in substance that

(1) Applicant traverses the rejection of "software comprises hardware".

(2) Applicant argued that "virtual PLC" does not appear anywhere in the present application.

(3) The references, alone or in combination, do not teach "an interrupt line of the assigned resource shared in the second operating system with at least one real-time card" as to claims 1, 14, 22, and 32.

(4) There is lack of Evidence of reasons for combining the references.

41. Examiner respectfully disagrees with applicant's remark.

As to point 1, applicants acknowledge that the soft PLC is software program that runs on the PC executes the program. It is right, and it should be in the claim. The software can only be executed or run on a computer, not comprised by a computer.

As to point 2, it is the typo error of "virtual PLC". The rejection was withdrawn.

As to point 3, applicants failed to point out how the references do not teach the claimed limitation. It is the combination of Kimura, Halang, and Notenboom teaches the claimed invention. See rejection above.

As to point 4, applicants certainly admitted that there is proper evidence of obviousness. Examiner did cite evidences for combination. Examiner also cited more details evidences for every combination.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUONG N. HOANG whose telephone number is (571)272-3763. The examiner can normally be reached on Monday - Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng A. An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/
Supervisory Patent Examiner, Art Unit 2195

Ph
June 22, 2008